

### **REMARKS**

Applicant thanks the Examiner for acknowledging the claim for priority under 35 U.S.C. § 119, and receipt of a certified copy of the priority document submitted March 5, 2001.

Applicant thanks the Examiner for considering the references cited with the Information Disclosure Statement filed January 14, 2002.

### **Status of the Application**

Claims 1-8 are all the claims pending in the Application, as claims 7 and 8 are newly added to more fully define the current invention. Claims 1-6 have been rejected.

### **Drawing Objection**

The Examiner has objected to the drawings, and indicated that FIG. 3 should be designated as "Prior Art." Applicants submit herewith Proposed Drawing Corrections that label FIG. 3 "Prior Art." Thus, withdrawal of the objection is respectfully requested.

### **Obviousness Rejections of Claims 1-6 Under 35 U.S.C. § 103(a)**

The Examiner has rejected claims 1-6 under 35 U.S.C. § 103(a) as being unpatentable over Fishman (US 3,196,920; hereinafter "Fishman") in view of Semonin (US 3,467,159; hereinafter "Semonin") and optionally in view of Japan '308 (JP 4-228308; hereinafter "JP '308") and/or Baus (WO 98/33669; hereinafter "Baus"). This rejection is respectfully traversed.

Applicants respectfully submit that Fishman, Semonin, JP '308 and Baus fail to teach or suggest, alone or in combination, all of the features recited in amended claim 1. For example, these references do not teach or suggest the claimed pneumatic tire in which 1) the main lug grooves are inclined with respect to the tread width direction and have the same inclining

direction in the opposing shoulder regions, and 2) a narrow shallow groove is inclined in the opposite direction with respect to each main lug groove.

Fishman

Specifically, although Fishman discloses a pneumatic tire having a tread comprising wide recesses 22 (main lug grooves) disposed in opposing shoulder regions of the tread, and narrow recesses 26 (narrow grooves) (Figs 1 and 3), these wide recesses 22 are parallel to the tread width direction. Therefore, these recesses 22 are not inclined with respect to the tread width direction," as is recited in amended claim 1.

In the claimed invention, the fact that the main lug grooves are inclined allows them to receive input gradually, which results in superior uneven wear resistance and vibration performance. The parallel wide recesses 22 of Fishman, on the other hand, receive input all at once, and therefore do not sufficiently improve uneven wear resistance or vibration performance.

Semonin and JP '308

Additionally, although the Examiner relies on Semonin and JP '308 in an attempt to supply the conceded deficiency of Fishman (shallow groove portion), the constructions of the shallow groove portions in Semonin and JP'308 clearly do not make up for the deficiencies in Fishman discussed above. For example, neither Semonin nor JP'308 teach or even suggest the claimed combination of the narrow shallow groove in a central region of the tread portion with the shallow groove portion in a shoulder end region in which 1) the main lug grooves are inclined with respect to the tread width direction and 2) the a narrow shallow groove is inclined in the opposite direction with respect to each main lug groove.

Blaus

In addition, the tread structure of Blaus does not cure the deficiencies in Fishman discussed above.

Therefore, Applicants respectfully request that the Examiner withdraw this rejection of claim 1. Applicants also respectfully request that the Examiner withdraw the rejections of claims 2-6 at least because of their dependency from claim 1.

New Claims 7 and 8

Applicants hereby add new claims 7 and 8 to more fully define the invention.

Claim 7

Applicants respectfully submit that Claim 7 is fully supported by the Application, *at least* by FIG. 1. Applicants also submit that new claim 7 is allowable over the cited references at least because of its dependency from claim 1, and because none of the cited references teach or suggest the further recitation that "each of the main lug grooves has a bending point."

At times, the inclining angle of a main lug groove can be too large to allow for sufficient traction. If a bending point is disposed in each main lug groove according to new claim 7, however, the claimed pneumatic tire can be inclined at large angle and still improve the uneven wear resistance and the vibration performance of the tire while maintaining satisfactory traction.

Claim 8

Applicants respectfully submit that Claim 8 is fully supported by the Application, *at least* by pg. 4, lines 11-14. Further, Applicants respectfully submit that none of the applied references teach or suggest all of the features of new claim 8. Specifically, neither Fishman nor Baus

disclose the groove depth range of the narrow shallow groove "set in a range of 15 to 25% of groove depth of the main lug groove."

In fact, Fishman discloses that the wide recesses 22 are deeper than the narrow recesses and that the wide recesses 22 are about one inch deep and the narrow recesses 26 are about 1/2 inch deep as shown in Column 2, lines 48-50. Accordingly, the groove depth of the narrow recesses 26 can be said to be 50% of the groove depth of wide recesses 22. Such a groove depth is clearly not "set in a range of 15 to 25% ... of the main lug groove," as recited in claim 8.

Further, Baus discloses in the specification on page 2, lines 17-24 that the central lug 60 has a radial height has measured from the inner tread base 34 and the tire bar connecting the lug heads 64,66 has a radial height  $h_{T1}$  of at least  $h$ . Thus, the groove depth of the narrow shallow groove is at least 30% of groove depth of the main lug groove. Therefore, Baus cannot teach or suggest a groove depth "set in a range of 15 to 25% ... of the main lug groove," as recited in claim 8.

### **Conclusion**

In view of the foregoing, it is respectfully submitted that claims 1-8 are allowable. Thus, it is respectfully submitted that the application now is in condition for allowance with all of the claims 1-8.


If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Amendment Under 37 C.F.R. § 1.111  
U.S. Appln. No.: 09/770,619

Attorney Docket # Q62623  
Group Art Unit 1733

Please charge any fees which may be required to maintain the pendency of this application, except for the Issue Fee, to our Deposit Account No. 19-4880.

Respectfully submitted,

  
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**APPENDIX**  
**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

**The claims are amended as follows:**

1. (Amended) A pneumatic tire having a tread pattern in which main lug grooves are disposed in opposing shoulder regions of a tread portion at a predetermined pitch in a circumferential direction of a tire, the main lug grooves being so arranged as to provide circumferential phase difference between the opposing tread shoulder regions,

wherein the main lug grooves are inclined with respect to the tread width direction and have the same inclining direction in the opposing shoulder regions,

wherein a narrow shallow groove inclined in the opposite direction with respect to each main lug groove is disposed in a central region of the tread portion in its width direction for connecting each main lug groove located in the opposing tread shoulder regions, and

wherein a shallow groove portion is formed in a shoulder end region inside each main lug groove.

**Claims 7 and 8 are added as new claims.**

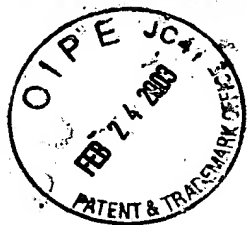


Fig.2

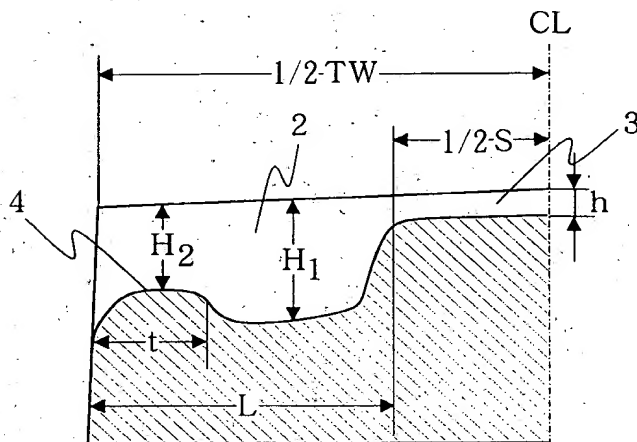
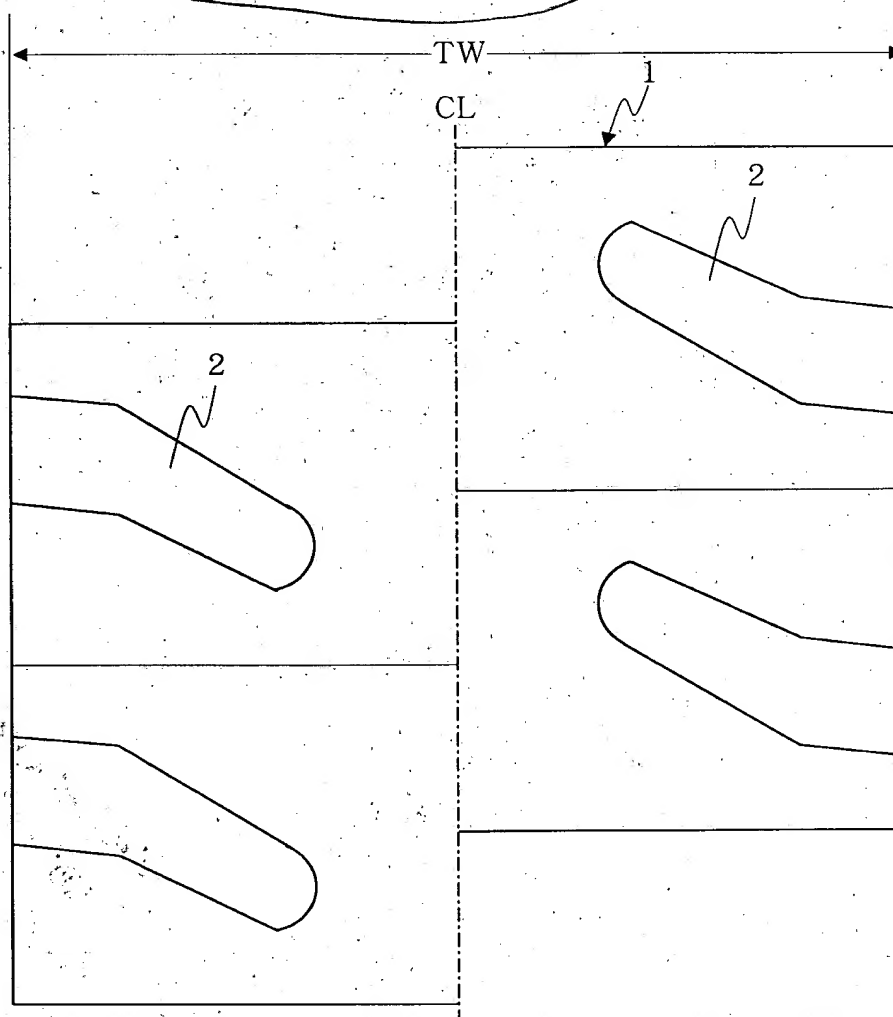


Fig.3

PRIOR ART



approved  
for